

### **REMARKS**

Applicant has carefully reviewed and considered the Office Action mailed on April 16, 2007, and the references cited therewith.

Claims 1, 12 and 22 are amended and claims 1-30 remain pending in this application.

### **Claim Objections**

Claims 1 and 22 were objected to for the noted informalities. Claims 1 and 22 have been amended to correct the noted informality. It is therefore submitted that the objection has been overcome and should accordingly be withdrawn.

### **35 USC § 102 Rejection of the Claims**

**Claims 1-3, 5-10, 12-17 and 19-21 were rejected under 35 USC § 102(b) as being anticipated by *Hughes* (US Patent 6,185,222).** For a claim to be anticipated under 35 USC 102, a single reference must disclose each and every element and each and every relationship between elements. The Applicant respectfully submits that *Hughes* does not disclose each and every element or each and every relationship of the claims for reasons noted below. Accordingly, the rejections are respectfully traversed.

Independent claim 1 is directed to a switching device that includes a plurality of ports to transmit data to and receive data from external sources. The ports operate at asymmetric speeds. A switching matrix provides selective connectivity between the ports. A plurality of channels connect the ports to the switching matrix. The number of channels associated with each port is determined by the speed of the port.

The Applicant respectfully submits that *Hughes* does not disclose each and every element of claim 1. For example, *Hughes* does not disclose ports operating at asymmetric speeds as required by claim 1. The Examiner contends that *Hughes* discloses ports operating at asymmetric speeds since “the asymmetric switch includes the ports which also are asymmetric” (see col. 4, lines 18-20). The Applicant points out that the Examiner’s contention did not

mention the speed of ports was asymmetric as required by claim 1 and submits that *Hughes* does not disclose this. The passage referred to by the Examiner deals with asymmetric switch-to-port interfaces (more output interfaces than input interfaces) which has nothing to do with the asymmetric speed of the ports. Rather, the reason for the asymmetric switch-to-port interfaces is the asymmetric switch fabric that has N inputs and M outputs where  $M > N$  so that multiple packets can be switched to a particular output port at the same time so that buffering can be performed at the output port rather than the switch fabric (see for example col. 3, lines 10-25). There is clearly no disclosure of the ports operating at asymmetric speeds as required by claim 1.

*Hughes* does not disclose the number of channels associated with each port is determined by the speed of the port. The Examiner contends that *Hughes* discloses the number of channels associated with each port being determined by the speed of the port since “coupled lines increase throughput” (see col. 3, lines 56-64). The Applicant submits that the Examiner’s contention did not discuss the number of channels being based on the speed of ports as required by claim 1 and submits that *Hughes* does not disclose this. Rather, the passage simply discloses that the number of input ports and outputs ports need not be asymmetric (can be the same) for each port. It also discloses that the additional throughput to the output ports (as discussed above for shifting output buffering to the output port) may be based on higher throughput lines rather than additional lines. There is to clearly no disclosure of the number of channels associated with each port being determined by the speed of the port as required by claim 1.

For at least the reasons noted above, *Hughes* does not disclose each and every element and each and every relationship of claim 1 and therefore clearly does not anticipate claim 1. Accordingly, claim 1 is submitted to be patentable over *Hughes*.

Claims 2, 3 and 5-10 depend from claim 1 and are submitted to be patentable over *Hughes* for at least the reasons addressed above with respect to claim 1 and for the further features recited therein.

For example, claim 5 recites that data is transferred between an incoming port and a corresponding outgoing port at speed of the slower of the incoming port and the corresponding outgoing port and claim 6 recites the number of channels connected together to transfer data between the incoming port and the corresponding outgoing port is the number of channels associated with the slower of the incoming port and the corresponding outgoing port. As

discussed above there is no disclosure in *Hughes* of the ports operating at different speeds so that it follows that *Hughes* does not disclose data being transferred between ports at the slower speed of the ports or the number of channels connected together being based thereon. The Examiner contends that *Hughes* discloses data being transferred at slower speed and the number of channels corresponding to slower of incoming and outgoing ports since “the input lines can be a fraction of the output lines throughput by the variable  $k$ ” (see col. 3, lines 56-64). The Applicant submits that the Examiner’s contention is clearly erroneous. Initially, the Applicant points out that the additional output lines enable more than one input port to transfer data to a single output port at the same time and has nothing to do with the speed of a particular input port or output port communicating.

Furthermore, since there is less input throughput (channels) for each port, the transfer of data would clearly always be limited thereby. Accordingly, the variable  $k$  has no bearing on the transmission of data between input port and output port let alone input and output ports having different operating speeds. It follows that the variable  $k$  has no relation to transferring data between an incoming port and a corresponding outgoing port at speed of the slower of the incoming port and the corresponding outgoing port as required by claim 5 or the selection of number of channels as required by claim 6. There is to clearly no disclosure of the additional features of claims 5 and 6. Claims 5 and 6 are patentable for at least these additional reasons.

Claim 8 recites the scheduler configures the switching matrix to connect inactive incoming ports to inactive outgoing ports and claim 9 recites the scheduler configures the switching matrix to connect inactive incoming channels to inactive outgoing channels. The Examiner contends that *Hughes* discloses the scheduler connecting inactive ports and inactive channels since “the arbiter can have packets delivered to other ports which would be inactive since an active port would contend with an active port” (see col. 6, lines 1-13). The Applicant submits that the Examiner’s contention is clearly erroneous. The passage simply discusses that if enough requests have been received to utilize all the output bandwidth for a particular output port the scheduler may delay additional requests. This has nothing to do with connecting inactive ports and channels. There is to clearly no disclosure of the additional features of claims 8 and 9. Claims 8 and 9 are patentable for at least these additional reasons.

The rejection of claims 1-3 and 5-10 should be withdrawn for at least the reasons noted above.

Independent claim 12 is submitted to be patentable over *Hughes* for at least similar reasons to those advanced above with respect to claim 1. Claim 12 has been amended to clarify that the ports can operate at different speeds from one another. Claims 13-17 and 19-21 depend from claim 12 and are submitted to be patentable over *Hughes* for at least the reasons noted for claim 12 and for the further features recited therein. The rejection of claims 12-17 and 19-21 should accordingly be withdrawn.

### **35 USC § 103 Rejection of the Claims**

**Claims 4, 18 and 24 were rejected under 35 USC § 103(a) as being unpatentable over *Hughes* in view of *Ash et al.* (US Patent 5,130,982).** The rejection is respectfully traversed.

Claim 4 depends from claim 1. The Examiner does not rely on *Ash et al.* disclosing or suggesting the deficiencies in the teachings of *Hughes* with respect to claim 1, such as the ports operating at asymmetric speeds and the number of channels associated with a port being determined by the speed of the port, and the Applicant submits that *Ash et al.* do not disclose or suggest these deficiencies. Accordingly, even assuming *arguendo* that *Ash et al.* discloses what the Examiner contends (without acknowledging such) and that the motivation provided by the Examiner to combine the references is reasonable (without acknowledging such) the device of claim 1 would not be obtained. Claim 4 is therefore submitted to be patentable over the combination of references.

Furthermore, the Examiner acknowledges that *Hughes* does not disclose the scheduler connecting all the channels associated with a first port to a subset of the channels associated with a second port, as required by claim 4. The Examiner submits that *Ash et al.* discloses these features since “bandwidth to the linked nodes is dynamically allocated to channels which can be a single or a group of channels in the communication link” (see col. 1, line 67 – col. 2, line 21).

The Applicant submits that this passage has nothing to do with channels connecting ports to a switching matrix, or the ports operating at different speeds, let alone using only a subset of the channels for a faster port as required by claim 4. Rather this passage simply states that bandwidth between nodes is dynamically allocated with remaining bandwidth being shared amongst nodes.

Additionally, the motivation to combine references provided by the Examiner is insufficient as the number of channels between port and switching matrix in claim 4 is based on the speed of the ports and has nothing to do with increasing quality of service as suggested by the Examiner.

For at least the reasons noted above, claim 4 is submitted to be patentable over the combination of *Hughes* and *Ash et al.* The rejection of claim 4 should accordingly be withdrawn.

Claim 18 depends from claim 12. For at least reasons similar to those advanced above with respect to claim 12, the Applicant submits that the *Hughes* and *Ash et al.*, whether taken alone or in any reasonable combination, do not result in independent claim 12, let alone dependent claim 18. That is, *Ash et al.* do not disclose or suggest the deficiencies in the teachings of *Hughes* with respect to claim 12, *Ash et al.* do not disclose or suggest the features of claim 18, and the motivation to combine the references is insufficient.

For at least the reasons noted above, claim 18 is submitted to be patentable over the combination of *Hughes* and *Ash et al.* The rejection of claim 18 should accordingly be withdrawn.

Claim 24 depends from claim 22. The Examiner acknowledges that *Hughes* does not disclose or suggest claim 22 and does not rely on *Ash et al.* for disclosing the acknowledged deficiencies in the teachings of *Hughes*. Accordingly, claim 24 is submitted to be patentable over this combination of references and the rejection should be withdrawn.

**Claim 11 was rejected under 35 USC § 103(a) as being unpatentable over *Hughes* in view of *Isoyama et al.* (US Patent 6,810,038). The rejection is respectfully traversed.**

Claim 11 depends from claim 1. The Examiner does not rely on *Isoyama et al.* disclosing or suggesting the deficiencies in the teachings of *Hughes* with respect to claim 1, such as the ports operating at asymmetric speeds and the number of channels associated with a port being determined by the speed of the port, and the Applicant submits that *Isoyama et al.* do not disclose or suggest these deficiencies. Accordingly, even assuming *arguendo* that *Isoyama et al.* discloses what the Examiner contends (without acknowledging such) and that the motivation provided by the Examiner to combine the references is reasonable (without acknowledging such) the device of claim 1 would not be obtained. Claim 11 is therefore submitted to be patentable over the combination of references. The rejection of claim 11 accordingly should be withdrawn.

**Claims 22, 23, 25-28 and 30 were rejected under 35 USC § 103(a) as being unpatentable over *Hughes* in view of *Crowther et al.* (US Patent 5,751,710).** The rejection is respectfully traversed.

For at least reasons similar to those advanced above with respect to claim 1 the Applicant submits that in addition to the admitted deficiencies in the teachings of *Hughes* with respect to claim 22, that *Hughes* also does not disclose or suggest Ethernet cards operating at different speeds from one another or the number of channels in the backplane associated with an Ethernet card being based on speed of the Ethernet card, as required by claim 22. The Examiner does not rely on *Crowther et al.* disclosing or suggesting the additional deficiencies in the teachings of *Hughes* with respect to claim 22 and the Applicant submits that *Crowther et al.* do not disclose or suggest these deficiencies. Accordingly, even assuming *arguendo* that *Crowther et al.* disclose what the Examiner contends (without acknowledging such) and that the motivation provided by the Examiner to combine the references is reasonable (without acknowledging such) the device of claim 22 would not be obtained. Claim 22 is therefore submitted to be patentable over the combination of references. The rejection of claim 22 accordingly should be withdrawn.

Claims 23, 25-28 and 30 depend from claim 22 and are submitted to be patentable over the combination of references for at least the reasons advanced above with respect to claim 22 and the further features recited therein. The rejection of claims 22, 23, 25-28 and 30 should accordingly be withdrawn.

**Claim 29 was rejected under 35 USC § 103(a) as being unpatentable over *Hughes* and *Crowther et al.* in further view of *Isoyama et al.* (US Patent 6,810,038).** The rejection is respectfully traversed.

Claim 29 depends from claim 22. The Examiner does not rely on *Isoyama et al.* disclosing or suggesting the additional deficiencies in the teachings of *Hughes* noted above with respect to claim 22 and the Applicant submits that *Isoyama et al.* do not disclose or suggest these deficiencies. Accordingly, even assuming arguendo that *Isoyama et al.* disclose what the Examiner contends (without acknowledging such) and that the motivation provided by the Examiner to combine the references is reasonable (without acknowledging such) the device of claim 22 would not be obtained. Claim 29 is therefore submitted to be patentable over the combination of references. The rejection of claim 29 accordingly should be withdrawn.

Conclusion

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney (215-230-5511) to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 50-4238.


Respectfully submitted,

RAMAPRASAD SAMUDRALA ET AL.

By their Representatives,

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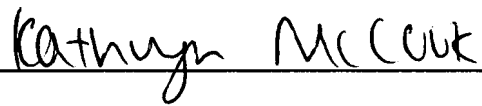
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